

REMARKS

Claims 1-6 are all the claims pending in the application. Applicants thank the Examiner for acknowledging Applicants' claim for foreign priority and receipt of the certified priority document.

Drawings

The drawings have been objected to because the grounds of rejection indicate that Figure 3 does not disclose the same information as recited in claims 2 and 5. In particular, the grounds of rejection mention in claims 2 and 5, the method and means respectively, for multiplying the average power values by respective positive constants, wherein the comparison means perform the comparison between the average power values and the products of the average powers by respective positive constants.

Applicants respectfully traverse this objection. The Examiner is referred to the present specification at page 8, starting at the second paragraph where the constants (shown in Figure 3 as P_D , K_M , P_M , and K_D) are discussed and the claimed comparison method also discussed in relation to Figures 3 and 4.

Claim Rejections - 35 USC § 112

Claims 1-3 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite. The grounds of rejection state that claim 1 is a method claim, but that Applicants are claiming an apparatus. Applicants respectfully traverse this rejection. The Examiner is referred to the claim

in its entirety in which method steps are clearly recited. However, Applicants have amended the claim to more clearly define the method of the present invention.

Claim Rejections - 35 USC § 103

Claims 1-6 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Monsen (U.S. Patent No. 3,879,664), hereafter referred to as Monsen, in view of Nagashima (U.S. Patent No. 5,898,741), hereafter referred to as Nagashima.

Nagashima and Monsen are generally related to signal processing techniques using associated diversity circuit receivers. Nagashima relates to a delayed detection maximum ratio composition (MRC) diversity circuit. In particular, the MRC circuits used in Nagashima are for use in mobile radio base stations (see col. 1, lines 5-8). MRC is traditionally used to obtain receiver diversity in wireless systems.

Monsen relates to a diversity receiver system including a forward adaptive filter equalizer. The forward adaptive filter equalizer is used to filter and equalize signals at bandpass frequency, rather than at the demodulated or baseband frequencies (see col. 3, lines 8-15). The placement of the forward adaptive filter equalizer, allegedly allows for better signal processing performance results (see col. 3, line 1) than in prior art systems.

The present invention relates to signal processing using space-diversity reception techniques. In the present invention, as recited in claim 1, a method is claimed for selecting a clock signal in a baseband combiner of a space-diversity receiver. The selected clock signal is used to drive a clock recovery circuit. In particular, in the method of claim 1, a clock recovery circuit is driven by means of one of a main signal, filtered and sampled, and at least one diversity

signal, filtered and sampled. To select the clock signal, the main and diversity signals are equalized, and then the average power of the equalized main signal and the average power of the at least one equalized diversity signal are calculated. From there, the clock recovery circuit is driven by means of the sampled signal chosen on the basis of a comparison between the average power of the main and diversity equalized signals.

The grounds of rejection generally indicate that this process is disclosed by Monsen, but acknowledge that Monsen does not disclose or suggest a method for calculating “average power”. Instead, the grounds of rejection indicate that this feature is disclosed by Nagashima. Applicants respectfully traverse this rejection.

As discussed above, claim 1 recites equalizing main and diversity signals, and then, *inter alia*:

“calculating the average power of the equalized main signal and the average power of the at least one equalized diversity signal, and

driving the clock recovery circuit by means of the sampled signal chosen on the basis of a comparison between the average power of the main and diversity equalized signals.”

The grounds of rejection state that Monsen discloses an equalizer as unit 13 in Figure 1, and that main and diversity signals are equalized at this point. The grounds of rejection then turn to Nagashima and state that this reference discloses calculating the average power of equalized and diversity signals (citing Figure 3 and col. 3, lines 15-14, and alleging that the Received Signal Strength Indicator (RSSI) gives an indication of the average power of each signal. However, Applicants respectfully submit that the measurement of RSSI of the signals in the

Nagashima receiver are not *equalized signals* as used by the present invention. Rather, the signals are signals from respective reception branches (1-4 as shown in Figure 3). From there, a comparison circuit selects the signal/reception branch having maximum RSSI (see col. 3, lines 58-66) and uses this signal in the MRC diversity circuit section 15 for adjusting synchronization of the diversity signals (see col. 4, lines 4-10). Thus, it is not necessary to adjust synchronization independently in every reception branch. *Id.* One of ordinary skill in the art would recognize that the signal at the reception branch having maximum RSSI is not an equalized signal as used in the present invention.

In Monsen, intermediate frequency (IF) signals are amplified on the basis of the strongest of the received signals (see col. 4, lines 35-45) for use in the diversity combiner 14. As shown in Figure 1, however, this selection is *prior to* any input into the adaptive forward transversal filter equalizers 13. Thus, neither reference discloses calculating the power of *equalized signals*. Rather, the concepts of selecting strong signals in these two references is grounded at detection of the signal prior to any equalization.

In addition, Applicants note that the present invention claims calculating the *average* power of the main and diversity signals. The grounds of rejection are silent as to how measuring RSSI is related to calculating the *average* power of signals. Applicants note that the equations for calculating average power in exemplary embodiments in the present invention are shown on page 7 of the present specification. Accordingly, Applicants respectfully submit that claim 1 is allowable, as well as independent claim 6, which also includes similar features. The dependent claims are allowable at least based on their dependency on these independent claims.

In addition, regarding claim 2, the grounds of rejection acknowledge that Monsen is silent about the claimed means for calculating average power and its details, but that Nagashima discloses those means, further comprising:

providing a main positive constant and multiplying the main positive constant by the average power of the equalized main signal; and in the instance where at the preceding time of processing the clock recovery circuit driving signal was the main signal, possibly filtered and sampled, driving the clock recovery circuit by means of said at least one diversity signal, possibly filtered and sampled, if and only if the average power of the at least one equalized diversity signal is greater than the product of the main positive constant by the average power of the equalized main signal. The grounds of rejection allege that the positive constant is assumed to be one and cites Figure 3 and column 3, lines 15-48.

Applicants respectfully traverse this rejection. As noted above, Nagashima discloses measuring RSSI of signals from respective reception branches (1-4 as shown in Figure 3). Contrary to the grounds of rejection, this use of RSSI would not suggest to one of ordinary skill in the art the use of a constant as claimed, and in particular, one used for calibration purposes (see present specification at page 8, second full paragraph). Dependent claims 3 and 5 are also allowable for similar reasons. Should the claims not be allowed on the basis of this Amendment, Applicants would also kindly like the Examiner to explain the basis/technical rationale for the assumption that “the positive constant is assumed to be one.”

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

AMENDMENT UNDER 37 CFR 1.111
U. S. Application No. 10/090,749

Attorney Docket No. 68642

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Ronald Kimble
Registration No. 44,186

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

23373

CUSTOMER NUMBER

Date: August 12, 2005